

- Equation: $v = f \lambda$
 - velocity
 - frequency
 - "lambda" → wavelength

- Units: Hertz (Hz) = $\frac{1}{s}$

- velocity \rightarrow how fast the wave is traveling

- Energy in a wave:
 - Waves are just transporting energy
 - 2 ways to increase energy:
 1. Increase amplitude
 2. Increase the frequency.

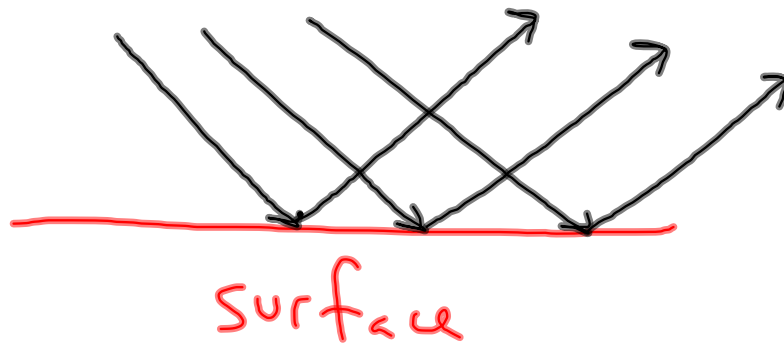
- Doppler Effect:
 - Change in frequency due to relative motion between source and an observer
 - As the source moves closer to the observer, the frequency increases and the wavelength decreases
 - As the source moves away from the observer, the frequency decreases and wavelength increases

- Wave Interactions:

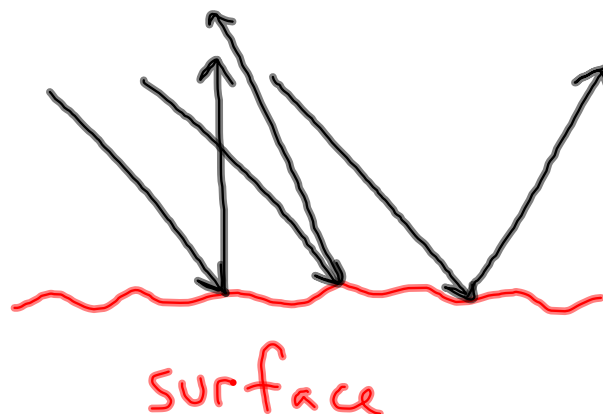
- Wave can interact with other waves, objects, or changes in media
- When waves meet a new surface or boundary, the wave can reflect
- When a wave passes the edge of an object or passes through an opening, the wave diffracts.
- When a wave passes from one medium to another, it refracts.

- Reflection:

- Flat surfaces \rightarrow incoming waves have the same angle as the reflected waves



- Rough surfaces \rightarrow incoming waves and reflected waves have different angles



- Diffraction:

- When waves pass the edge of an object or reach an opening, they bend or spread.
- For small openings, waves spread out as if they were created there



- Passing an edge, waves will bend around object

